

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F.
Larsen

2011

Test 1984: John Deere 6100D

Nebraska Tractor Test Laboratory

University of Nebraska-Lincoln, tractortestlab@unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Energy Systems Commons](#), [History of Science, Technology, and Medicine Commons](#), [Other Mechanical Engineering Commons](#), [Physical Sciences and Mathematics Commons](#), [Science and Mathematics Education Commons](#), and the [United States History Commons](#)

Laboratory, Nebraska Tractor Test, "Test 1984: John Deere 6100D" (2011). *Nebraska Tractor Tests*. 2366.
<https://digitalcommons.unl.edu/tractormuseumlit/2366>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

NEBRASKA TRACTOR TEST 1984

JOHN DEERE 6100D DIESEL

9 SPEED

CHASSIS SERIAL NUMBERS 020725 AND HIGHER

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1017 rpm)					
85.33 (63.63)	2100	5.80 (21.97)	0.480 (0.292)	14.70 (2.90)	
Standard Power Take-off Speed—(PTO speed—1000 rpm)					
84.51 (63.02)	2066	5.66 (21.44)	0.473 (0.288)	14.92 (2.94)	

VARYING POWER AND FUEL CONSUMPTION

85.33 (63.63)	2100	5.80 (21.97)	0.480 (0.292)	14.70 (2.90)	Air temperature
74.33 (55.43)	2149	5.30 (20.05)	0.503 (0.306)	14.03 (2.76)	73°F (23°C)
56.13 (41.85)	2167	4.39 (16.62)	0.552 (0.336)	12.78 (2.52)	Relative humidity
37.63 (28.06)	2184	3.45 (13.06)	0.647 (0.394)	10.91 (2.15)	14%
19.08 (14.23)	2198	2.53 (9.59)	0.937 (0.570)	7.53 (1.48)	Barometer
4.47 (3.33)	2200	1.82 (6.88)	2.871 (1.746)	2.46 (0.48)	29.13" Hg (98.65 kPa)

Maximum Torque - 277 lb.-ft. (376 Nm) at 1400 rpm

Maximum Torque Rise -29.8%

Torque rise at 1700 engine rpm - 17%

TRACTOR SOUND LEVEL WITH CAB

	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 4th (B1) gear	77.0	76.9
Transport speed-no load- 9th (C3) gear		78.6
Bystander in 9th (C3) Gear		84.2

TIRES AND WEIGHT

Rear Tires - No., size, ply & psi (kPa)

Front Tires - No., size, ply & psi (kPa)

Height of Drawbar

Static Weight with operator- Rear

- Front

- Total

Tested Without Ballast

Two 18.4-34;8;12(85)

Two 13.6-24;8;12(85)

19.0 in (485 mm)

6250 lb (2835 kg)

3700 lb (1678 kg)

9950 lb (4513 kg)

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832

Dates of tests: May 2- 4, 1981

Manufacturer: Industrious John Deere, Boulevard Valdez Sanchez # 470, Saltillo, Coahuila CP25005 Mexico

FUEL, OIL and TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8476 Fuel weight 7.057 lbs/gal (0.846 kg/l) Oil SAE 15W-40 API service classification CH-4 Transmission and hydraulic lubricant John Deere Hy-Gard fluid Front axle lubricant SAE 85W-140 API GL-5 Total time engine was operated: 8.5 hours

ENGINE: Make John Deere Diesel **Type** Four cylinder vertical with turbocharger and air to air aftercooler **Serial No.** *PE4045L154956* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.19" x 5.00" (106.5 mm x 127.0 mm) **Compression ratio** 19.0 to 1 **Displacement** 276 cu in (4525 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element and prestrainer **Fuel cooler** radiator for pump return fuel **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan.

ENGINE OPERATING PARAMETERS: Fuel rate: 39.5 - 42.9 lb/h (17.9 - 19.5 kg/h) High idle: 2160 - 2240 rpm Turbo boost: nominal 17.4 - 20.3 psi (120 - 140 kPa) as measured 19.0 psi (131 kPa)

CHASSIS: Type front wheel assist **Serial No.** *1P06100DJBH020954* **Tread width** rear 59.5" (1512 mm) to 79.4" (2016 mm) front 59.7" (1516 mm) to 79.3" (2016 mm) **Wheelbase** 92.5" (2350 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.72 (2.77) second 2.37 (3.82) third 3.05 (4.91) fourth 4.05 (6.51) fifth 5.58 (8.98) sixth 7.17 (11.54) seventh 9.70 (15.61) eighth 13.40 (21.56) ninth 17.21 (27.70) reverse 1.78 (2.86), 2.45 (3.95), 3.16 (5.08), 4.18 (6.73), 5.77 (9.29), 7.42 (11.94), 10.04 (16.15), 13.86 (22.30), 17.81 (28.66) **Clutch** dry disc operated by foot pedal **Brakes** wet disc operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2085 engine rpm or 1000 rpm at 2065 engine rpm **Unladen tractor mass** 9775 lb (4434 kg)

HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

Maximum force exerted through whole range: 6841 lbs (30.4 kN)

i) Sustained pressure with relief valve open: 3188 psi (220 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 18.9 GPM (71.6 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 17.4 GPM (66.0 l/min)

Delivery pressure: 2443 psi (168 bar)

Power: 24.9 HP (18.5 kW)

THREE POINT HITCH PERFORMANCE (SAE Static test)

Observed maximum pressure psi. (bar) 2840 (195)

Location: hydraulic manifold

Hydraulic oil temperature: °F (°C) 149 (65)

Location: hydraulic sump

Category: II

Quick attach: No

System pressure 2480 psi (171 Bar)

Hitch point distance to ground level in. (mm)	8.0 (203)	15.1 (384)	22.0 (559)	29.1 (739)	36.0 (915)
Lift force on frame lb	10343	9597	8880	8389	7224
" " " " " " (kN)	(46.0)	(42.7)	(39.5)	(37.3)	(32.1)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

Note: The performance figures on this report apply to tractors with chassis serial numbers 020725 and higher.

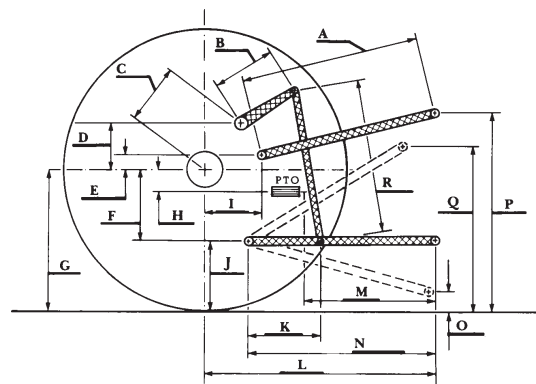
REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests the fuel temperature at the injection pump inlet was maintained at 163°F (73°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1984**, June 13, 2011.

Roger M. Hoy
Director

M.F. Kocher
D.R. Keshwani
P.J. Jasa
Board of Tractor Test Engineers

	OECD test		SAE test	
	inch	mm	inch	mm
A	26.8	680	25.7	652
B	12.8	325	12.8	325
C	20.4	518	20.4	518
D	18.6	473	18.6	473
E	6.0	153	6.0	153
F	6.9	176	6.9	176
G	32.3	820	32.3	820
H	2.9	48	2.9	48
I	19.3	489	19.3	489
J	25.4	644	25.4	644
K	19.8	503	19.8	503
L	44.1	1121	44.1	1121
M	22.3	566	22.3	566
N	37.2	945	37.2	945
O	7.7	195	7.7	195
P	49.4	1254	44.4	1127
Q	32.3	820	32.3	820
R	31.7	805	31.7	805



HITCH DIMENSIONS AS TESTED—NO LOAD



JOHN DEERE 6100D DIESEL
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln